

Claims

1. A method in a system for transferring accounting information, said method comprising:

5        metering data related to a service used by at least one terminal,

         providing the metered data as accounting information to at least one Extensible Authentication Protocol (EAP) service authorization server,

10        sending, by means of an Extensible Authentication Protocol request (EAP-request), a service authorization request from said at least one EAP service authorization server to said at least one terminal,

         digitally signing accounting information, in said at  
15        least one terminal,

         including, at said at least one terminal, the digitally signed accounting information in an Extensible Authentication Protocol response (EAP-response), and

         sending the digitally signed accounting information  
20        to an AAA-server.

2. A method according to claim 1, wherein the act of providing the metered data to the at least one EAP service authorization server is performed by means of  
25        internal communication within a device comprising at least one metering server and said at least one EAP service authorization server.

3. A method according to claim 1, wherein the act of  
30        providing the metered data to the at least one EAP service authorization server is performed by means of network communication between a device comprising at least one metering server and a device comprising said at least one EAP service authorization server.

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4. A method according to claim 1, wherein said metering is performed by at least one metering server included in an access point, and wherein said EAP-request for service authorization and said EAP-response including  
5 signed accounting information is received and sent by the terminal via said access point.

5. A method according to claim 4, wherein said receiving and sending by said at least one terminal  
10 from/to said access point is performed by means of Wireless Local Area Network (WLAN) communication.

6. A method according to claim 1, wherein said sending of a service authorization request comprises  
15 including the accounting information, provided to said at least one EAP service authorization server, in said EAP-request for service authorization, and wherein said method further comprises verifying, performed by said at least one terminal, the accounting information received  
20 from said at least one EAP service authorization server before the step of digitally signing accounting information is performed, wherein the accounting information that is signed is the verified accounting information.

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7. A method according to claim 1, wherein said sending of a service authorization request comprises including the accounting information, provided to said at least one EAP service authorization server, in said EAP-  
30 request for service authorization, and wherein said method further comprises verifying, performed by the user of said at least one terminal, the accounting information received from said at least one EAP service authorization server before the step of digitally signing accounting  
35 information is performed, wherein the accounting

information that is signed is the verified accounting information.

8. A method according to claim 1, wherein said  
5 sending of a service authorization request does not  
comprise any step of including the accounting information  
provided to said at least one EAP service authorization  
server in said EAP-request, and wherein said digitally  
10 signing of accounting information comprises digitally  
signing accounting information collected by said at least  
one terminal.

9. A method according to claim 6, wherein said step  
of sending the verified and digitally signed accounting  
15 information to the AAA-server comprises:

sending the digitally signed accounting information  
from said at least one terminal to said at least one EAP  
service authorization server by means of said EAP-  
response,  
20 verifying the signature of the digitally signed  
accounting information at the at least one EAP service  
authorization server, and  
sending the digitally signed accounting information  
from said at least one EAP service authorization server  
25 to the AAA server.

10. A method according to claim 1, wherein the  
digitally signing is performed by means of a public key  
algorithm.

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11. A system for transferring accounting  
information, said system comprising:

a metering server for metering data related to a  
service,

an Extensible Authentication Protocol (EAP) service authorization server including a generator for generating Extensible Authentication Protocol requests (EAP-request) for service authorizations, and a network connection  
5 means,

a terminal including a signer arranged to digitally sign verified accounting information, an Extensible Authentication Protocol response (EAP-response) generator arranged to insert digitally signed accounting  
10 information in EAP-responses, and a network connection means, and

an Authentication Authorization Accounting (AAA) server arranged to manage accounting information relating to at least one terminal.

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12. A system according to claim 11, wherein the metering server and the EAP service authorization server are arranged in the same device.

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13. A system according to claim 11, wherein the metering server and the EAP service authorization server are arranged in different devices.

14. A system according to claim 11, further  
25 comprising an access point, wherein the access point includes said metering server.

15. A system according to claim 14, wherein said at least one terminal is a Wireless Local Area Network  
30 (WLAN) enabled terminal and said at least one access point is a WLAN access point.

16. A system according to claim 11, wherein said generator for generating Extensible Authentication  
35 Protocol request (EAP-request) service authorizations is

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arranged to insert accounting information of at least one terminal in EAP-requests for service authorizations.

17. A system according to claim 11, wherein said  
5 terminal further comprises a verifier arranged to verify accounting information received from a service authorization server.

18. A system according to claim 11, wherein said EAP  
10 service authorization server further comprises a signature verifier for verifying signatures of terminals, and an accounting message generator for generating accounting messages to be sent to said AAA-server.

15 19. A method in a terminal, said method comprising:  
collecting data corresponding to accounting information relevant for at least one service presently utilized in the terminal,  
receiving an Extensible Authentication Protocol  
20 request (EAP-request) for service authorization,  
digitally signing accounting information, and  
sending the digitally signed accounting information in an Extensible Authentication Protocol response (EAP-response).

25 20. A method according to claim 19, wherein the accounting information that is digitally signed in the step of digitally signing accounting information is the data collected in the step of collecting data  
30 corresponding to accounting information.

21. A method according to claim 19, wherein said  
EAP-request for service authorization, received in the step of receiving an EAP-request for service  
35 authorization, includes accounting information relevant

for said at least one service presently utilized in the terminal.

22. A method according to claim 21, the method  
5 further comprising:

comparing said received accounting information with the collected data, and

if the collected data corresponds with the accounting information then performing said steps of  
10 digitally signing accounting information and sending the digitally signed accounting information.

23. A method according to claim 19, wherein receiving an EAP-request and sending an EAP-response is  
15 performed over a Wireless Local Area Network connection.

24. A method according to claim 19, wherein the act of digitally signing comprises encrypting said verified accounting information by means of a public key  
20 cryptosystem.

25. A terminal comprising:  
a collector arranged to collect data corresponding to accounting information relevant for at least one  
25 service presently utilized in the terminal,

a signer arranged to digitally sign accounting information,

an Extensible Authentication Protocol response (EAP-response) generator arranged to insert digitally signed  
30 accounting information in EAP-responses, and

a network connection means.

26. A terminal according to claim 25, further comprising a comparing device arranged to compare the  
35 collected data with received accounting information.

27. A terminal according to claim 25, wherein said  
network connection means is a Wireless Local Area Network  
(WLAN) connection means for connecting said terminal to a  
5 WLAN.

28. A terminal according to claim 25, further  
comprising a public key cryptosystem encryption algorithm  
for signing verified accounting information.

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29. A method in an Extensible Authentication  
Protocol (EAP) service authorization server, said method  
comprising:

receiving accounting information related to at least  
15 one terminal,

sending, to at least one terminal, an Extensible  
Authentication Protocol request (EAP-request) for  
ordering service authorization,

receiving an Extensible Authentication Protocol  
20 response (EAP-response) including signed accounting  
information, which has been signed in the at least one  
terminal, and

providing an Authentication Authorization Accounting  
server with the signed accounting information.

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30. A method according to claim 29, wherein said  
accounting information is received via a network.

31. A method according to claim 29, wherein said  
30 accounting information is received via internal  
communication means of a device in which said EAP service  
authorization server is included.

32. A method according to claim 29, further  
35 comprising:

inserting said received accounting information in the EAP-request, before the acts of sending an EAP-request and receiving an EAP-response is performed, for ordering service authorization.

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33. A method according to claim 29, wherein the signature of said signed accounting information is verified by means of a public key cryptosystem algorithm.

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34. A method according to claim 29, further comprising verifying the signed accounting information before the signed accounting information is provided to said AAA server.

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35. A method according to claim 29, wherein said EAP-response is received from a terminal via a Wireless Local Area Network (WLAN).

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36. An Extensible Authentication Protocol (EAP) service authorization server comprising:

an accounting information receiver for receiving accounting information relating to at least one terminal,

an Extensible Authentication Protocol request (EAP-request) generator arranged to generate EAP-requests for service authorizations,

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an extractor for extracting digitally signed accounting information from an Extensible Authentication Protocol response (EAP-response) received,

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an accounting message generator for generating a message, complying with an Authentication Authorization Accounting (AAA) protocol, including said digitally signed accounting information, and  
a network connection means.

37. An EAP service authorization server according to claim 36, wherein said EAP service authorization server is comprised in an access point.

5        38. An EAP service authorization server according to claim 36, wherein the EAP-request generator further is arranged to insert accounting information relating to services used by at least one terminal in an EAP-request.

10       39. An EAP service authorization server according to claim 36, further comprising at least one public key for decryption of a signed message.

15       40. A computer program directly loadable into the internal memory of a terminal, the computer program comprising software code portions for performing the method of claim 19.

20       41. A computer program directly loadable into the internal memory of an Extensible Authentication Protocol (EAP) service authorization server, the computer program comprising software code portions for performing the method of claim 29.

25       42. An Extensible Authentication Protocol response (EAP-response) packet comprising digitally signed accounting information relating to a terminal.

30       43. An EAP-response packet according to claim 42, wherein the packet includes a Data type field specifying the signing method used for signing the accounting information, and a Data field including the signed accounting information, which is signed by means of the method specified in the Data type field.

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44. A method according to claim 7, wherein said step of sending the verified and digitally signed accounting information to the AAA-server comprises:

5 sending the digitally signed accounting information from said at least one terminal to said at least one EAP service authorization server by means of said EAP-response,

10 verifying the signature of the digitally signed accounting information at the at least one EAP service authorization server, and sending the digitally signed accounting information from said at least one EAP service authorization server to the AAA server.

15 45. A computer program directly loadable into the internal memory of a terminal, the computer program comprising software code portions for performing the method of claim 20.

20 46. A computer program directly loadable into the internal memory of a terminal, the computer program comprising software code portions for performing the method of claim 21.

25 47. A computer program directly loadable into the internal memory of a terminal, the computer program comprising software code portions for performing the method of claim 22.

30 48. A computer program directly loadable into the internal memory of a terminal, the computer program comprising software code portions for performing the method of claim 24.

49. A computer program directly loadable into the  
internal memory of an Extensible Authentication  
Protocol(EAP) service authorization server, the computer  
program comprising software code portions for performing  
5 the method of claim 32.

50. A computer program directly loadable into the  
internal memory of an Extensible Authentication  
Protocol(EAP) service authorization server, the computer  
10 program comprising software code portions for performing  
the method of claim 33.

51. A computer program directly loadable into the  
internal memory of an Extensible Authentication  
15 Protocol(EAP) service authorization server, the computer  
program comprising software code portions for performing  
the method of claim 34.